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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,340	10/07/2003	Naomi Nakane	065905-0308	2666

22428 7590 06/28/2007

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EXAMINER	
CHENG, PETER L	

ART UNIT	PAPER NUMBER
2609	

MAIL DATE	DELIVERY MODE
06/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/679,340	NAKANE, NAOMI	
	Examiner	Art Unit	
	Peter L. Cheng	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *07 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/7/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

- There are some typographical and grammatical errors in the disclosure; for example, **paragraph 2, page 1, line 2** ("on a media" should be either "on media" or "on a medium"), **paragraph 3, page 2, line 1** ("and/or sent to" probably should be "and/or are sent to"), **paragraph 3, page 2, lines 5 – 6** ("with exist" probably should be "will exist");

- **Paragraph 22, page 7, line 8:** it is assumed that applicant intended to cite reference number **300** instead of **360**;

Appropriate correction is required.

Claim Objections

2. Claim 2 – 4, 7 – 10, 12, 13, 15, 17, 18, 20 are objected to because of the following informalities:

- Regarding the usage of the word **"wherein"**,

The subject matter of a properly construed claim is defined by the terms that limit its scope. It is this subject matter that must be examined. As a general matter, the grammar and intended meaning of terms used in a claim will dictate whether the language limits the claim scope.

> Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. The following are examples of language that may raise a question as to the limiting effect of the language in a claim:
>
> (A) statements of intended use or field of use,
> (B) "adapted to" or "adapted for" clauses,
> (C) "wherein" clauses, or
> (D) "whereby" clauses.
>
> This list of examples is not intended to be exhaustive. See also MPEP § 2111.04.

Therefore, **"wherein"** should be removed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1 – 14, 16 - 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Haneda [US Patent 4,959,669]** in view of **Yoo [US Patent 5,894,356]**, **Okamoto [US Patent 6,035,156]** and **Kuwata [US Patent 6,055,071]**.

As for claims 1 and 2, HANEDA teaches a method for performing gamma correction in an image forming device, comprising:

first scanning an image pattern in a first direction [Fig. 15, step **Read Reference Original Document; col. 14, lines 4 - 11];**

calculating a first gamma correction pattern based on the first scan of the image pattern [Fig. 15, step **First Mode, Color Rectification];**

and adjusting a scanning process in the image forming device based on the calculated first gamma correction pattern for the image pattern [Fig. 15, step **First Mode, Store Image Data in Reference Image Memory].**

However, HANEDA does not teach a

second scanning the image pattern in a second direction different from the first direction;

calculating a second gamma correction pattern based on the second scan of the image pattern;

and adjusting a scanning process in the image forming device based on the *second gamma* correction patterns for the image pattern.

nor does HANEDA teach, regarding claim 2,

the first scan is a color scan and the second scan is a monochrome scan.

Yoo teaches a similarly cited apparatus that is capable of operating in both color or black/white modes [**col. 4, lines 61 - 67**]. Although, gamma correction for both color and black and white modes is not specifically mentioned, in light of the teachings by Haneda, it would have been necessary to calibrate the gamma correction for both operating modes.

Okamoto teaches a similarly cited apparatus that is capable of scanning an image in either forward or reverse directions [**col. 38, lines 21 - 25**]. Therefore, the scanning of a gamma correction calibration document in either the forward or reverse directions would have been possible.

Kuwata teaches the use of a single gamma correction calibration document that contains a "plurality of density gradation patterns 311 corresponding to each of image quality modes for colors of YMCK"; **col. 13, lines 18 – 20.** Tones of both color and grayscale are possible with varying amounts of yellow, magenta, cyan and black colors.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Haneda, Yoo, Okamoto and Kuwata to perform a *second scanning of a single gamma correction calibration document containing both color tones and grayscale patterns in a "black and white" (i.e, monochrome) operating mode from which a second gamma correction pattern could be derived and used to adjust calibrate the apparatus (i.e., adjust the scanning process).*

Regarding claim 3, HANEDA does not teach the method of claim 1, wherein

> **the first direction is a forward direction and the second direction is a backward direction with respect to the image pattern.**

nor does HANEDA teach, regarding claim 4, the method of claim 3, wherein

> **both first scanning and second scanning are performed in a single periodic pass over the image pattern, the single periodic pass including scanning the image pattern in the forward direction covering a leading end to a trailing end of the image pattern, and scanning the image pattern in the backward direction covering the trailing end to the leading end of the image pattern.**

However, as with claims 1 and 2, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Haneda, Yoo,

Okamoto and Kuwata to perform the scanning of the single gamma correction calibration document in a first, forward direction scan for the first color operating mode followed immediately by a second, reverse direction scan for the second black and white (i.e., monochrome) operating mode *in order to save time* especially, if this procedure were to be performed in a manufacturing setting.

Regarding claim 5, HANEDA further teaches

> **printing the image pattern using the image forming device [Fig. 1(a)** and **Fig. 1(b)** image forming devices**].**

Regarding claim 6, YOO further teaches

> **switching a charge couple device (CCD) output from a color output to a monochrome output after the step of first scanning and before the step of second scanning** [By removing an RGB filter set, the CCD output can be switched to a monochrome mode; **col. 4, lines 14 – 17; col. 4, lines 61 - 67].**

Regarding claim 7, HANEDA further teaches at least one of the steps of calculating a first gamma correction pattern and the step of calculating a second gamma correction pattern comprises:

> **determining an average actual brightness across the scan; comparing the determined average actual brightness to a predetermined**

linear curve; and generating gamma correction values in order to achieve a linear curve from the determined average actual brightness across the scan [Fig. 18, shows a gamma correction characteristic curve; **col. 14, lines 55 - 59].**

Regarding claim 8, KUWATA further teaches

the step of calculating a first gamma correction pattern comprises calculating discrete color gamma correction patterns for at least red, green, and blue colors [Fig. 1, reference item **403** (RGB gamma calibrating circuit)**].**

Regarding claim 9, HANEDA further teaches, wherein the step of calculating a first gamma correction pattern comprises

calculating discrete color gamma correction patterns for at least a photograph image pattern and a text image pattern [Fig. 13 shows a gamma calibration document that corrects for both photograph and character (text) modes**].**

Regarding claim 10, HANEDA further teaches, wherein the step of calculating a second gamma correction pattern comprises

calculating discrete monochrome gamma correction patterns for at least a photograph image pattern and a text image pattern [As mentioned for claim

9, the gamma correction calibration document shown in Fig. 13 could also be used for calculating "discrete monochrome gamma correction patterns"].

Regarding claim 11, HANEDA further teaches a method comprising:

obtaining a corrected image pattern using the adjusted scanning process [Fig. 15, step **PRINT; col. 14, lines 11 - 19];**

color scanning the corrected image pattern in the first direction [Fig. 15, step **READ PRINT DOCUMENT];**

calculating a third gamma correction pattern based on the color scan of the corrected image pattern [Fig. 15, step **COLOR RECTIFICATION];**

adjusting the scanning process on the image forming device based on the calculated third correction pattern for the corrected image pattern [Fig. 15, step **STORE CORRECTION FACTOR].**

However, HANEDA does not teach

monochrome scanning the corrected image pattern in the second direction;

calculating a fourth gamma correction pattern based on the monochrome

scan of the corrected image pattern; and

adjusting the scanning process on the image forming device based on the calculated fourth gamma correction pattern for the corrected image pattern.

However, as with claim 1, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Haneda, Yoo, Okamoto and Kuwata to perform a *monochrome scanning of a single gamma correction calibration document containing both color tones and grayscale patterns in a "black and white" (i.e, monochrome) operating mode from which a fourth gamma correction pattern could be derived and used to adjust calibrate the apparatus (i.e., adjust the scanning process)*.

Regarding claim 12, YOO further teaches a method, wherein the step of first scanning an image pattern comprises

color scanning the image pattern with a charge couple device (CCD) output set at a full color output ["Since color separation filter set 14 can be *inserted* ... by filter system 21", the image information of the document can be processed as color signals; **col. 4, lines 61 - 65].**

Regarding claim 13, YOO further teaches a method, wherein the step of second scanning the image pattern comprises

monochrome scanning the image pattern with a charge couple device (CCD) output set at a black and white (B/W) output [By removing an RGB filter set, the CCD output can be switched to a monochrome mode; **col. 4, lines 14 – 17; col. 4, lines 61 - 67].**

Regarding claim 14, HANEDA teaches an image forming device, comprising:

a scanner configured to scan an image pattern [Fig. 2];

and a processor [Fig. 7 color processor**] configured to:**

color scan the image pattern in a first direction [Fig. 15, step **Read Reference Original Document; col. 14, lines 4 - 11];**

calculate a color gamma correction pattern based on the color scan of the image pattern [Fig. 15, step **First Mode, Color Rectification];**

adjust the scanner based on the calculated color and monochrome gamma correction patterns for the image pattern [Fig. 15, step **First Mode, Store Image Data in Reference Image Memory].**

However, HANEDA does not teach

monochrome scan the image pattern in a second direction different from the first direction;

calculate a monochrome gamma correction pattern based on the monochrome scan of the image pattern;

However, as with claim 1, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Haneda, Yoo, Okamoto and Kuwata to perform a *second scanning of a single gamma correction calibration document containing both color tones and grayscale patterns in a "black and white" (i.e, monochrome) operating mode from which a second gamma correction pattern could be derived and used to adjust calibrate the apparatus (i.e., adjust the scanning process).*

Regarding claim 16, HANEDA further teaches the image forming device of claim 14, further comprising

an image formation unit configured to form a corrected image pattern using the scanner as adjusted by the processor [Fig. 1(a) and **Fig. 1(b)** image forming devices**].**

Regarding claim 17, HANEDA further teaches the image forming device of claim 16, wherein the processor is further programmed to:

color scan the corrected image pattern in the first direction [Fig. 15, step **Read Reference Original Document; col. 14, lines 4 - 11];**

calculate a second color gamma correction pattern based on the color scan of the corrected image pattern [Fig. 15, step **First Mode, Color Rectification];**

and adjust the scanner based on the calculated second color and monochrome gamma correction patterns for the corrected image pattern [Fig. 15, step **First Mode, Store Image Data in Reference Image Memory]**

However, HANEDA does not teach

monochrome scan the corrected image pattern in the second direction;

calculate a second monochrome gamma correction pattern based on the monochrome scan of the corrected image pattern;

However, as with claims 1 and 2, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Haneda, Yoo, Okamoto and Kuwata to perform a *second scanning of a single gamma correction calibration document containing both color tones and grayscale patterns in a "black and white" (i.e, monochrome) operating mode from which a second gamma correction*

pattern could be derived and used to adjust calibrate the apparatus (i.e., adjust the scanning process).

Regarding claim 18, HANEDA does not teach the image forming device of claim 14, wherein

> **the processor is configured to perform both the color scanning and the monochrome scanning in a single periodic pass over the image pattern, the single periodic pass including scanning the image pattern in the forward direction covering a leading end to a trailing end of the image pattern, and scanning the image pattern in the backward direction covering the trailing end to the leading end of the image pattern.**

However, as with claims 1 and 2, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Haneda, Yoo, Okamoto and Kuwata to perform the scanning of the single gamma correction calibration document in a first, forward direction scan for the first color operating mode followed immediately by a second, reverse direction scan for the second black and white (i.e., monochrome) operating mode *in order to save time* especially, if this procedure were to be performed in a manufacturing setting.

Regarding claim 19, HANEDA further teaches an image forming device, comprising:

means for color scanning an image pattern in a first direction [Fig. 15, step **Read Reference Original Document; col. 14, lines 4 - 11];**

means for calculating a color gamma correction pattern based on the color scan of the image pattern [Fig. 15, step **First Mode, Color Rectification];**

means for adjusting a scanning process in the image forming device based on the calculated color and monochrome gamma correction patterns for the image pattern [Fig. 15, step **First Mode, Store Image Data in Reference Image Memory].**

However, HANEDA does not teach

means for monochrome scanning the image pattern in a second direction different from the first direction;

means for calculating a monochrome gamma correction pattern based on the monochrome scan of the image pattern;

However, as with claims 1 and 2, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Haneda, Yoo, Okamoto and Kuwata to perform a *second scanning of a single gamma correction calibration document containing both color tones and grayscale patterns in a "black and*

white" (i.e, monochrome) operating mode from which a second gamma correction pattern could be derived and used to adjust calibrate the apparatus (i.e., adjust the scanning process).

Regarding claim 20, HANEDA does not teach the image forming device of claim 19, wherein

> **the means for color scanning and the means for monochrome scanning perform the scanning in a single periodic pass over the image pattern, the single periodic pass including scanning the image pattern in a forward direction covering a leading end to a trailing end of the image pattern, and scanning the image pattern in a backward direction covering the trailing end to the leading end of the image pattern.**

However, as with claims 3 and 4, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Haneda, Yoo, Okamoto and Kuwata to perform the scanning of the single gamma correction calibration document in a first, forward direction scan for the first color operating mode followed immediately by a second, reverse direction scan for the second black and white (i.e., monochrome) operating mode *in order to save time* especially, if this procedure were to be performed in a manufacturing setting.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Haneda [US Patent 4,959,669]** in view of **Yoo [US Patent 5,894,356]**, **Okamoto [US Patent 6,035,156]**, **Kuwata [US Patent 6,055,071]** and **Sakakibara [US Patent Application 2003/0053157 A1]**.

Regarding claim 15, HANEDA does not teach the image forming device of claim 14, wherein

the scanner includes a four channel charge couple device (CCD) [Fig. 3B].

However, SAKAKIBARA does teach the use of a 4-line CCD for color red, green, blue and black/white as in the instant application. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Haneda, Yoo, Okamoto, Kuwata, and Sakakibara to perform *both color and monochrome scans with an integrated color/monochrome CCD in order to simplify the mechanical requirements for implementing a filter set as cited by Yoo.*

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter L. Cheng whose telephone number is 571-270-3007. The examiner can normally be reached on MONDAY - FRIDAY, 8:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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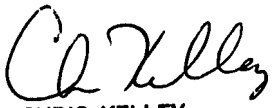

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